

## SEQUENCE LISTING

<110> Hiroshi MORI

<120> Gamma-secretase Inhibitor

<130> GP59-PCT

<150> JP 2002-121983

<151> 2002-04-14

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<211> 17

<212> PRT

<213> Homo sapiens

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1

5

10

15

Lys

<210> 2

<211> 6

<212> PRT

<213> Homo sapiens

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Ile	Thr	Leu	Val	Met	Leu
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Leu Val Met Leu

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Thr Leu Val Met

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Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg  
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 1 5 10 15

gcg ctg gag gta ccc act gat ggt aat gct ggc ctg ctg gct gaa ccc 96  
 Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro  
 20 25 30

cag att gcc atg ttc tgt ggc aga ctg aac atg cac atg aat gtc cag 144  
 Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln  
 35 40 45

aat ggg aag tgg gat tca gat cca tca ggg acc aaa acc tgc att gat	192
Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp	
50 55 60	
acc aag gaa ggc atc ctg cag tat tgc caa gaa gtc tac cct gaa ctg	240
Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu	
65 70 75 80	
cag atc acc aat gtg gta gaa gcc aac caa cca gtg acc atc cag aac	288
Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn	
85 90 95	
tgg tgc aag cgg ggc cgc aag cag tgc aag acc cat ccc cac ttt gtg	336
Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val	
100 105 110	
att ccc tac cgc tgc tta gtt ggt gag ttt gta agt gat gcc ctt ctc	384
Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu	
115 120 125	
gtt cct gac aag tgc aaa ttc tta cac cag gag agg atg gat gtt tgc	432
Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys	
130 135 140	
gaa act cat ctt cac tgg cac acc gtc gcc aaa gag aca tgc agt gag	480
Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu	
145 150 155 160	
aag agt acc aac ttg cat gac tac ggc atg ttg ctg ccc tgc gga att	528

Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile

165

170

175

gac aag ttc cga ggg gta gag ttt gtg tgt tgc cca ctg gct gaa gaa  
Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu

576

180

185

190

agt gac aat gtg gat tct gct gat gcg gag gag gat gac tcg gat gtc  
Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val

624

195

200

205

tgg tgg ggc gga gca gac aca gac tat gca gat ggg agt gaa gac aaa  
Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys

672

210

215

220

gta gta gaa gta gca gag gag gaa gaa gtg gct gag gtg gaa gaa gaa  
Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu

720

225

230

235

240

gaa gcc gat gat gac gag gac gat gag gat ggt gat gag gta gag gaa  
Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu

768

245

250

255

gag gct gag gaa ccc tac gaa gaa gcc aca gag aga acc acc agc att  
Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile

816

260

265

270

gcc acc acc acc acc acc acc aca gag tct gtg gaa gag gtg gtt cga  
Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg

864

275

280

285

gtt cct aca aca gca gcc agt acc cct gat gcc gtt gac aag tat ctc	912
Val Pro Thr Thr Ala Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu	
290 295 300	
 gag aca cct ggg gat gag aat gaa cat gcc cat ttc cag aaa gcc aaa	960
Glu Thr Pro Gly Asp Glu Asn Glu His Ala His Phe Gln Lys Ala Lys	
305 310 315 320	
 gag agg ctt gag gcc aag cac cga gag aga atg tcc cag gtc atg aga	1008
Glu Arg Leu Glu Ala Lys His Arg Glu Arg Met Ser Gln Val Met Arg	
325 330 335	
 gaa tgg gaa gag gca gaa cgt caa gca aag aac ttg cct aaa gct gat	1056
Glu Trp Glu Glu Ala Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp	
340 345 350	
 aag aag gca gtt atc cag cat ttc cag gag aaa gtg gaa tct ttg gaa	1104
Lys Lys Ala Val Ile Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu	
355 360 365	
 cag gaa gca gcc aac gag aga cag cag ctg gtg gag aca cac atg gcc	1152
Gln Glu Ala Ala Asn Glu Arg Gln Gln Leu Val Glu Thr His Met Ala	
370 375 380	
 aga gtg gaa gcc atg ctc aat gac cgc cgc cgc ctg gcc ctg gag aac	1200
Arg Val Glu Ala Met Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn	
385 390 395 400	
 tac atc acc got ctg cag gct gtt cct cct cgg cct cgt cac gtg ttc	1248

Tyr Ile Thr Ala Leu Gln Ala Val Pro Pro Arg Pro Arg His Val Phe	
405 410 415	
aat atg cta aag aag tat gtc cgc gca gaa cag aag gac aga cag cac	1296
Asn Met Leu Lys Lys Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His	
420 425 430	
acc cta aag cat ttc gag cat gtg cgc atg gtg gat ccc aag aaa gcc	1344
Thr Leu Lys His Phe Glu His Val Arg Met Val Asp Pro Lys Lys Ala	
435 440 445	
gct cag atc cgg tcc cag gtt atg aca cac ctc cgt gtg att tat gag	1392
Ala Gln Ile Arg Ser Gln Val Met Thr His Leu Arg Val Ile Tyr Glu	
450 455 460	
ogc atg aat cag tct ctc tcc ctg ctc tac aac gtg cct gca gtg gcc	1440
Arg Met Asn Gln Ser Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala	
465 470 475 480	
gag gag att cag gat gaa gtt gat gag ctg ctt cag aaa gag caa aac	1488
Glu Glu Ile Gln Asp Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn	
485 490 495	
tat tca gat gac gtc ttg gcc aac atg att agt gaa cca agg atc agt	1536
Tyr Ser Asp Asp Val Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser	
500 505 510	
tac gga aac gat gct ctc atg cca tct ttg acc gaa acg aaa acc acc	1584
Tyr Gly Asn Asp Ala Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr	
515 520 525	

gtg gag ctc ctt ccc gtg aat gga gag ttc agc ctg gac gat ctc cag	1632
Val Glu Leu Leu Pro Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln	
530 535 540	
ccg tgg cat tct ttt ggg gct gac tct gtg cca gcc aac aca gaa aac	1680
Pro Trp His Ser Phe Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn	
545 550 555 560	
gaa gtt gag cct gtt gat gcc cgc cct gct gcc gac cga gga ctg acc	1728
Glu Val Glu Pro Val Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr	
565 570 575	
act cga cca ggt tct ggg ttg aca aat atc aag acg gag gag atc tct	1776
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser	
580 585 590	
gaa gtg aag atg gat gca gaa ttc cga cat gac tca gga tat gaa gtt	1824
Glu Val Lys Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val	
595 600 605	
cat cat caa aaa ttg gtg ttc ttt gca gaa gat gtg ggt tca aac aaa	1872
His His Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys	
610 615 620	
ggt gca atc att gga ctc atg gtg ggc ggt gtt gtc ata gcg aca gtg	1920
Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Thr Val	
625 630 635 640	
atc gtc atc acc ttg gtg atg ctg aag aag aaa cag tac aca tcc att	1968



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Ile Val Ile Thr Leu Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile  
645 650 655

cat cat ggt gtg gtg gag gtt gac gcc gct gtc acc cca gag gag cgc 2016  
His His Gly Val Val Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg  
660 665 670

cac ctg tcc aag atg cag cag aac ggc tac gaa aat cca acc tac aag 2064  
His Leu Ser Lys Met Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys  
675 680 685

ttc ttt gag cag atg cag aac tag 2088  
Phe Phe Glu Gln Met Gln Asn  
690 695

<210> 7

<211> 695

<212> PRT

<213> Homo sapiens

<400> 7

Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg  
1 5 10 15

Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro  
20 25 30

10/28

Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln  
35 40 45

Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp  
50 55 60

Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu  
65 70 75 80

Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn  
85 90 95

Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val  
100 105 110

Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu  
115 120 125

Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys  
130 135 140

Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu  
145 150 155 160

Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile  
165 170 175

Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu  
180 185 190

Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val

11/28

195	200	205
Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys		
210	215	220
Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu		
225	230	235 240
Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu		
	245	250 255
Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile		
	260	265 270
Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg		
	275	280 285
Val Pro Thr Thr Ala Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu		
	290	295 300
Glu Thr Pro Gly Asp Glu Asn Glu His Ala His Phe Gln Lys Ala Lys		
305	310	315 320
Glu Arg Leu Glu Ala Lys His Arg Glu Arg Met Ser Gln Val Met Arg		
	325	330 335
Glu Trp Glu Glu Ala Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp		
	340	345 350
Lys Lys Ala Val Ile Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu		
	355	360 365

12/28

Gln Glu Ala Ala Asn Glu Arg Gln Gln Leu Val Glu Thr His Met Ala

370

375

380

Arg Val Glu Ala Met Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn

385

390

395

400

Tyr Ile Thr Ala Leu Gln Ala Val Pro Pro Arg Pro Arg His Val Phe

405

410

415

Asn Met Leu Lys Lys Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His

420

425

430

Thr Leu Lys His Phe Glu His Val Arg Met Val Asp Pro Lys Lys Ala

435

440

445

Ala Gln Ile Arg Ser Gln Val Met Thr His Leu Arg Val Ile Tyr Glu

450

455

460

Arg Met Asn Gln Ser Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala

465

470

475

480

Glu Glu Ile Gln Asp Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn

485

490

495

Tyr Ser Asp Asp Val Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser

500

505

510

Tyr Gly Asn Asp Ala Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr

515

520

525

Val Glu Leu Leu Pro Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln  
 530 535 540

Pro Trp His Ser Phe Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn  
 545 550 555 560

Glu Val Glu Pro Val Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr  
 565 570 575

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser  
 580 585 590

Glu Val Lys Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val  
 595 600 605

His His Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys  
 610 615 620

Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Thr Val  
 625 630 635 640

Ile Val Ile Thr Leu Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile  
 645 650 655

His His Gly Val Val Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg  
 660 665 670

His Leu Ser Lys Met Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys  
 675 680 685

Phe Phe Glu Gln Met Gln Asn

690

695

&lt;210&gt; 8

&lt;211&gt; 2313

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 8

atg	ctg	ccc	ggt	ttg	gca	ctg	ctc	ctg	ctg	gcc	gcc	tgg	acg	gct	cgg	48
Met	Leu	Pro	Gly	Leu	Ala	Leu	Leu	Leu	Leu	Ala	Ala	Trp	Thr	Ala	Arg	
1				5					10					15		

gcg	ctg	gag	gta	ccc	act	gat	ggt	aat	got	ggc	ctg	ctg	gct	gaa	ccc	96
Ala	Leu	Glu	Val	Pro	Thr	Asp	Gly	Asn	Ala	Gly	Leu	Leu	Ala	Glu	Pro	
			20					25					30			

cag	att	gcc	atg	ttc	tgt	ggc	aga	ctg	aac	atg	cac	atg	aat	gtc	cag	144
Gln	Ile	Ala	Met	Phe	Cys	Gly	Arg	Leu	Asn	Met	His	Met	Asn	Val	Gln	
		35					40					45				

aat	ggg	aag	tgg	gat	tca	gat	cca	tca	ggg	acc	aaa	acc	tgc	att	gat	192
Asn	Gly	Lys	Trp	Asp	Ser	Asp	Pro	Ser	Gly	Thr	Lys	Thr	Cys	Ile	Asp	
	50					55				60						

acc	aag	gaa	ggc	atc	ctg	cag	tat	tgc	caa	gaa	gtc	tac	cct	gaa	ctg	240
Thr	Lys	Glu	Gly	Ile	Leu	Gln	Tyr	Cys	Gln	Glu	Val	Tyr	Pro	Glu	Leu	
65					70				75					80		

cag atc acc aat gtg gta gaa gcc aac caa cca gtg acc atc cag aac 288  
 Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn  
                     85                    90                    95

tgg tgc aag cgg ggc cgc aag cag tgc aag acc cat ccc cac ttt gtg 336  
 Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val  
                     100                    105                    110

att ccc tac cgc tgc tta gtt ggt gag ttt gta agt gat gcc ctt ctc 384  
 Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu  
                     115                    120                    125

gtt cct gac aag tgc aaa ttc tta cac cag gag agg atg gat gtt tgc 432  
 Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys  
                     130                    135                    140

gaa act cat ctt cac tgg cac acc gtc gcc aaa gag aca tgc agt gag 480  
 Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu  
 145                    150                    155                    160

aag agt acc aac ttg cat gac tac ggc atg ttg ctg ccc tgc gga att 528  
 Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile  
                     165                    170                    175

gac aag ttc cga ggg gta gag ttt gtg tgt tgc cca ctg got gaa gaa 576  
 Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu  
                     180                    185                    190

agt gac aat gtg gat tct gct gat gcg gag gag gat gac tog gat gtc	624
Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val	
195 200 205	
tgg tgg ggc gga gca gac aca gac tat gca gat ggg agt gaa gac aaa	672
Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys	
210 215 220	
gta gta gaa gta gca gag gag gaa gaa gtg gct gag gtg gaa gaa gaa	720
Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu	
225 230 235 240	
gaa gcc gat gat gac gag gac gat gag gat ggt gat gag gta gag gaa	768
Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu	
245 250 255	
gag gct gag gaa ccc tac gaa gaa gcc aca gag aga acc acc agc att	816
Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile	
260 265 270	
gcc acc acc acc acc acc acc aca gag tct gtg gaa gag gtg gtt cga	864
Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg	
275 280 285	
gag gtg tgc tct gaa caa gcc gag acg ggg ccg tgc cga gca atg atc	912
Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Met Ile	
290 295 300	



tcc cgc tgg tac ttt gat gtg act gaa ggg aag tgt gcc cca ttc ttt 960  
Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe  
305 310 315 320

tac ggc gga tgt ggc ggc aac cgg aac aac ttt gac aca gaa gag tac 1008  
Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr  
325 330 335

tgc atg gcc gtg tgt ggc agc gcc atg tcc caa agt tta ctc aag act 1056  
Cys Met Ala Val Cys Gly Ser Ala Met Ser Gln Ser Leu Leu Lys Thr  
340 345 350

acc cag gaa cct ctt ggc cga gat cct gtt aaa ctt cct aca aca gca 1104  
Thr Gln Glu Pro Leu Gly Arg Asp Pro Val Lys Leu Pro Thr Thr Ala  
355 360 365

gcc agt acc cct gat gcc gtt gac aag tat ctc gag aca cct ggg gat 1152  
Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu Glu Thr Pro Gly Asp  
370 375 380

gag aat gaa cat gcc cat ttc cag aaa gcc aaa gag agg ott gag gcc 1200  
Glu Asn Glu His Ala His Phe Gln Lys Ala Lys Glu Arg Leu Glu Ala  
385 390 395 400

aag cac cga gag aga atg tcc cag gtc atg aga gaa tgg gaa gag gca 1248  
Lys His Arg Glu Arg Met Ser Gln Val Met Arg Glu Trp Glu Glu Ala  
405 410 415

gaa cgt caa gca aag aac ttg cct aaa gct gat aag aag gca gtt atc	1296
Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp Lys Lys Ala Val Ile	
420 425 430	
cag cat ttc cag gag aaa gtg gaa tct ttg gaa cag gaa gca gcc aac	1344
Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu Gln Glu Ala Ala Asn	
435 440 445	
gag aga cag cag ctg gtg gag aca cac atg gcc aga gtg gaa gcc atg	1392
Glu Arg Gln Gln Leu Val Glu Thr His Met Ala Arg Val Glu Ala Met	
450 455 460	
ctc aat gac cgc cgc cgc ctg gcc ctg gag aac tac atc acc gct ctg	1440
Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn Tyr Ile Thr Ala Leu	
465 470 475 480	
cag gct gtt cct cct cgg cct cgt cac gtg ttc aat atg cta aag aag	1488
Gln Ala Val Pro Pro Arg Pro Arg His Val Phe Asn Met Leu Lys Lys	
485 490 495	
tat gtc cgc gca gaa cag aag gac aga cag cac acc cta aag cat ttc	1536
Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His Thr Leu Lys His Phe	
500 505 510	
gag cat gtg cgc atg gtg gat ccc aag aaa gcc gct cag atc cgg tcc	1584
Glu His Val Arg Met Val Asp Pro Lys Lys Ala Ala Gln Ile Arg Ser	
515 520 525	

cag gtt atg aca cac ctc cgt gtg att tat gag cgc atg aat cag tct	1632
Gln Val Met Thr His Leu Arg Val Ile Tyr Glu Arg Met Asn Gln Ser	
530 535 540	
ctc tcc ctg ctc tac aac gtg cct gca gtg gcc gag gag att cag gat	1680
Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala Glu Glu Ile Gln Asp	
545 550 555 560	
gaa gtt gat gag ctg ctt cag aaa gag caa aac tat tca gat gac gtc	1728
Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn Tyr Ser Asp Asp Val	
565 570 575	
ttg gcc aac atg att agt gaa cca agg atc agt tac gga aac gat gct	1776
Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser Tyr Gly Asn Asp Ala	
580 585 590	
ctc atg cca tct ttg acc gaa acg aaa acc acc gtg gag ctc ctt ccc	1824
Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr Val Glu Leu Leu Pro	
595 600 605	
gtg aat gga gag ttc agc ctg gac gat ctc cag ccg tgg cat tct ttt	1872
Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln Pro Trp His Ser Phe	
610 615 620	
ggg gct gac tct gtg cca gcc aac aca gaa aac gaa gtt gag cct gtt	1920
Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn Glu Val Glu Pro Val	
625 630 635 640	

gat gcc cgc cct gct gcc gac cga gga ctg acc act cga cca ggt tct 1968  
 Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr Thr Arg Pro Gly Ser  
                   645                  650                  655

ggg ttg aca aat atc aag acg gag gag atc tct gaa gtg aag atg gat 2016  
 Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys Met Asp  
                   660                  665                  670

gca gaa ttc cga cat gac tca gga tat gaa gtt cat cat caa aaa ttg 2064  
 Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu  
                   675                  680                  685

gtg ttc ttt gca gaa gat gtg ggt tca aac aaa ggt gca atc att gga 2112  
 Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly  
                   690                  695                  700

ctc atg gtg ggc ggt gtt gtc ata gcg aca gtg atc gtc atc acc ttg 2160  
 Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Val Ile Thr Leu  
                   705                  710                  715                  720

gtg atg ctg aag aag aaa cag tac aca tcc att cat cat ggt gtg gtg 2208  
 Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile His His Gly Val Val  
                   725                  730                  735

gag gtt gac gcc got gtc acc cca gag gag cgc cac ctg tcc aag atg 2256  
 Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg His Leu Ser Lys Met  
                   740                  745                  750

cag cag aac ggc tac gaa aat cca acc tac aag ttc ttt gag cag atg 2304  
Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys Phe Phe Glu Gln Met  
755 760 765

cag aac tag 2313

Gln Asn

770

<210> 9

**<211> 770**

&lt;212&gt; PRT

<213> Homo sapiens

<400> 9

Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg  
1 5 10 15

Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro  
20 25 30

Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln  
35 40 45

Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp  
50 55 60

Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu  
65 70 75 80

Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn  
85 90 95

Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val  
100 105 110

Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu  
115 120 125

Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys  
130 135 140

Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu  
145 150 155 160

Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile  
165 170 175

Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu  
180 185 190

Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val  
195 200 205

Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys  
210 215 220

Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu  
 225 230 235 240

Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu  
 245 250 255

Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile  
 260 265 270

Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg  
 275 280 285

Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Met Ile  
 290 295 300

Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe  
 305 310 315 320

Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr  
 325 330 335

Cys Met Ala Val Cys Gly Ser Ala Met Ser Gln Ser Leu Leu Lys Thr  
 340 345 350

Thr Gln Glu Pro Leu Gly Arg Asp Pro Val Lys Leu Pro Thr Thr Ala  
 355 360 365

Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu Glu Thr Pro Gly Asp  
 370 375 380

Glu Asn Glu His Ala His Phe Gln Lys Ala Lys Glu Arg Leu Glu Ala  
 385 390 395 400

Lys His Arg Glu Arg Met Ser Gln Val Met Arg Glu Trp Glu Glu Ala  
 405 410 415

Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp Lys Lys Ala Val Ile  
 420 425 430

Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu Gln Glu Ala Ala Asn  
 435 440 445

Glu Arg Gln Gln Leu Val Glu Thr His Met Ala Arg Val Glu Ala Met  
 450 455 460

Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn Tyr Ile Thr Ala Leu  
 465 470 475 480

Gln Ala Val Pro Pro Arg Pro Arg His Val Phe Asn Met Leu Lys Lys  
 485 490 495

Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His Thr Leu Lys His Phe  
 500 505 510

Glu His Val Arg Met Val Asp Pro Lys Lys Ala Ala Gln Ile Arg Ser  
 515 520 525



Gln Val Met Thr His Leu Arg Val Ile Tyr Glu Arg Met Asn Gln Ser  
 530 535 540

Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala Glu Glu Ile Gln Asp  
 545 550 555 560

Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn Tyr Ser Asp Asp Val  
 565 570 575

Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser Tyr Gly Asn Asp Ala  
 580 585 590

Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr Val Glu Leu Leu Pro  
 595 600 605

Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln Pro Trp His Ser Phe  
 610 615 620

Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn Glu Val Glu Pro Val  
 625 630 635 640

Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr Thr Arg Pro Gly Ser  
 645 650 655

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys Met Asp  
 660 665 670

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Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu  
675 680 685

Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly  
690 695 700

Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Val Ile Thr Leu  
705 710 715 720

Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile His His Gly Val Val  
725 730 735

Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg His Leu Ser Lys Met  
740 745 750

Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys Phe Phe Glu Gln Met  
755 760 765

Gln Asn  
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<212> PRT

<213> Homo sapiens

<400> 10

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Val	Val	Ile	Ala	Thr	Val	Ile	Val	Ile	Thr	Leu
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<212> PRT

<213> Homo sapiens

<400> 13

Val Met Leu Lys Lys Lys

1

5